NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

Software Reuse Portal
SoftwareReuse.nasa.gov

Ryan Gerard

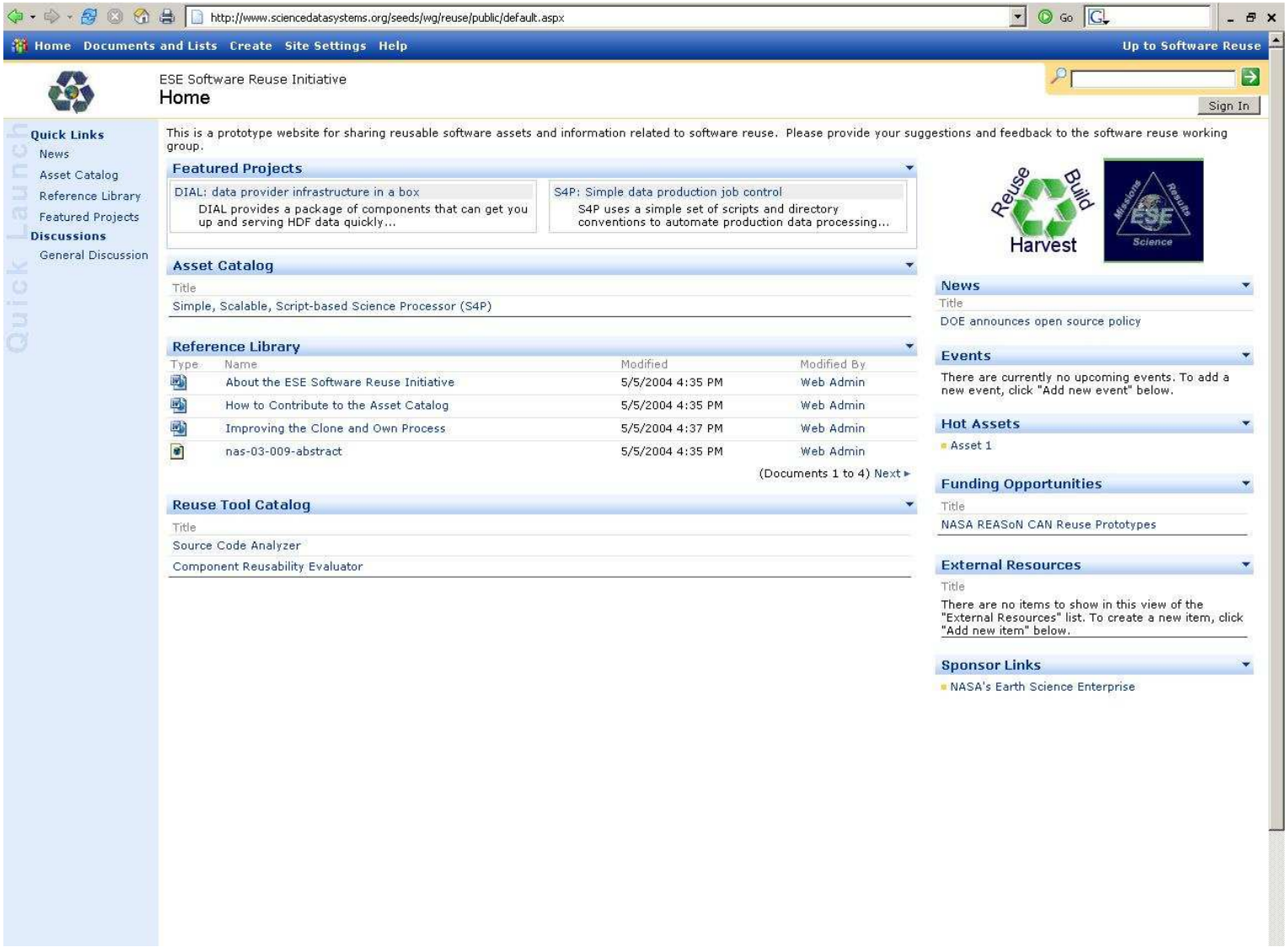
Overview

- Source of Software Reuse Resources targeted to the Earth Science community.
- Source for upcoming News and Events.
- Raise awareness of software reuse practices and theory.
- Platform to exchange and share resources with each other.

History

- Initial prototype of the portal created using Microsoft Sharepoint
- Live version using Plone
  - Open Source Content Management System
  - Update content using a simple browser interface
- NASA Affinity “skin” added
- First website to use the new DSWG server (kathy.gsfc.nasa.gov)

Portal Prototype

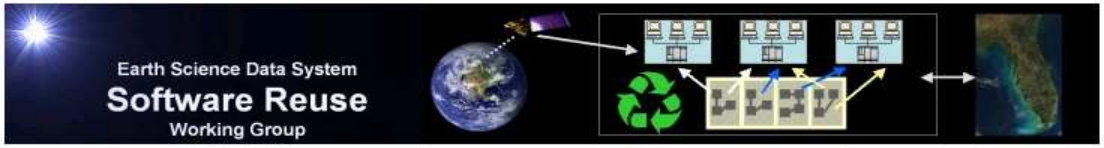


Technical Overview

- Content Management System – Plone
- Operating System – Linux
- Database – Gadfly/MySQL
- Web Server – Apache
- Template – NASA Affinity Template

Site Organization

- Home/News
- Reusable Assets
- Resources
  - Events
  - Featured Projects
  - Library
  - Technology Hotspots
  - External Resources
- Open Source
  - NASA
  - Non-NASA
- Funding
  - NASA
  - Non-NASA



news

Suggest a Reusable Asset Repository
2005-09-28

Reuse Metrics and Economic Model Paper Added
2005-09-26

Baltimore Convention Center announced as venue for ESDSWG meeting
2005-09-12

More...

upcoming events

Geological Society of America Annual Meeting
Salt Lake City, UT ,
2005-10-16

OOS TECH 2005
Baltimore, MD,
2005-10-24

Home

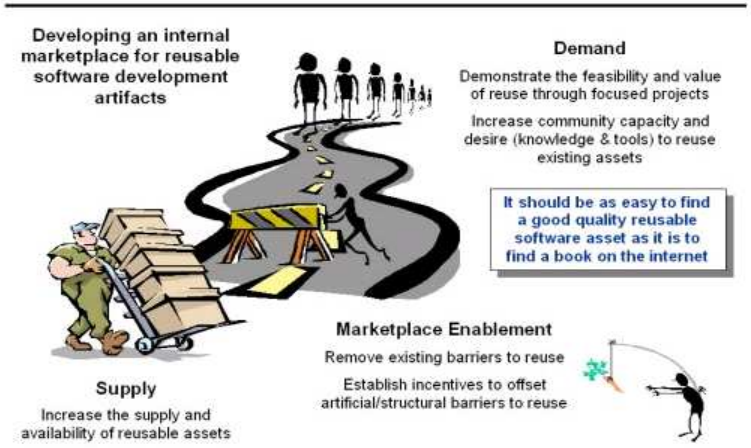
Software Reuse

Welcome to the Earth Science Data System Software (ESDS) Reuse Portal. Please visit the public ESDS Working Groups home page for more information.

Software reuse can help the science community by reducing software development timescales, reducing costs, and contributing to the dissemination of knowledge and expertise. This Software Reuse Portal has been established by the Reuse Working Group to bring together a collection of resources that will facilitate reuse within the Earth science community. Over the next few months we will be researching a variety of resources in the Earth and Space Science reuse community. Our long-term goal is to establish a knowledge sharing community for software reuse in Earth science and, possibly, to establish a "marketplace" for reusable software development artifacts.

We have completed our survey to better understand the practice of software reuse within the Earth Science community. Results will be published in the near future.

For more information, please visit our News , Site Map , About Us , and/or Contact page.



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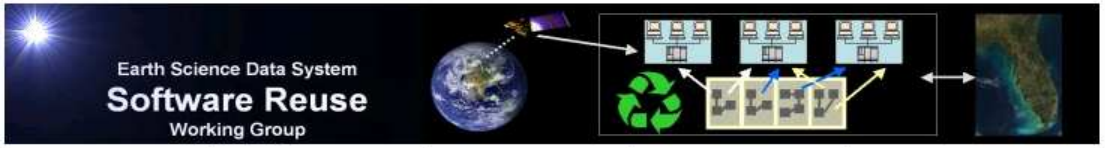

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Reusable Assets

Up one level

This section will become a resource for publishing and locating reusable software development artifacts for the earth and space science communities. We intend to provide access to reusable software components including access to related source code, algorithms, and executables to assist software development.

Suggest a Link

Computational Infrastructure for Geodynamics
CIG is working under a Cooperative Agreement with the National Science Foundation to develop, support, and disseminate open source software for the computational geophysics and related fields.

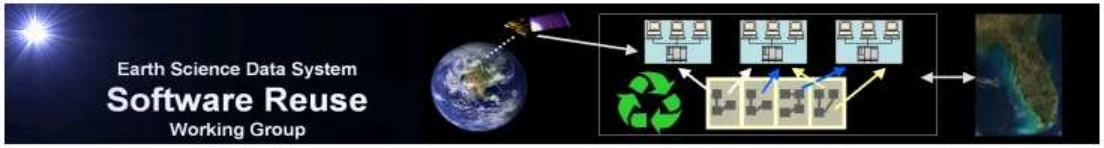
Earth Observing System Clearinghouse
The ECHO Client Reuse page is a resource to enable the sharing of source code between ECHO client developers.

Global Change Master Directory
NASA's GCMD enables users to locate and obtain access to Earth Science data sets and services relevant to the global change and Earth science research.

http://softwarereuse.gsfc.nasa.gov/Resources

GODDARD SPACE FLIGHT CENTER

+ Visit NASA.gov
+ Goddard Home Page



+ HOME | + REUSABLE ASSETS | + RESOURCES | + OPEN SOURCE | + FUNDING OPPORTUNITIES

working group members | log in

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Resources

Up one level

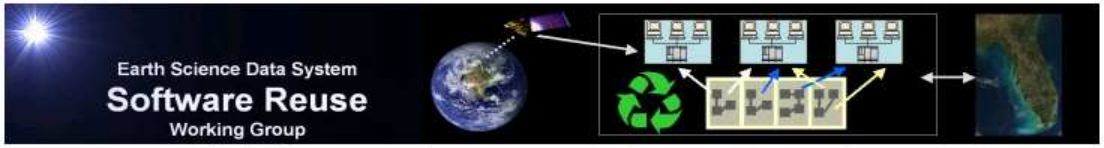
Events
Upcoming conferences, conventions, and meetings

Featured Projects
Highlights of projects that employ software reuse

Library
Downloadable working group publications, case studies, and other documents

Technology Hotspots
Information about reuse in new and emerging technologies

External Resources
Links to tools, reuse initiatives, books, and articles produced outside NASA



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Open Source

Open source or open source software (OSS) is any computer software distributed under a license which allows users to change and share the software freely. Open source software is required to have its source code freely available and end-users have the right to modify and redistribute the software to others.

Open source projects support a collaborative development model whereby developers from multiple organizations can read, modify, and redistribute the source code. In the process of doing this the software evolves as people improve it, adapt it, and fix bugs. Proponents of the open source development model claim that, in many ways, it is superior to the closed source approach. An active open source development community can develop software with superior stability, reliability, and security to that developed using other development models. This collaborative development model can also be particularly attractive to the scientific community where scientific advances are often the result of the combined efforts of researchers in many different organizations.

The Reuse Working Group has identified traditional software licensing mechanisms as a potential barrier to software reuse. Traditional licensing typically requires the reuser to negotiate usage terms and conditions with the intellectual property owner every time that they want to reuse something. This can often be a time very consuming and arduous process. Greater use of open source licensing will help simplify the dissemination of software to the scientific community and promote a more collaborative development model for scientific software.

We recognize that open source licensing is not appropriate for all software. For example, the presence of proprietary code or export control restrictions may be valid reasons for choosing not to go open source. However, where proprietary technology or other intellectual property considerations preclude open source licensing, we would encourage you to make software available for reuse by the community using some other licensing mechanism that does not necessarily expose the source code.

For more information:

- NASA Open Source Links
- Non-NASA Open Source Links

NASA Open Source Agreement

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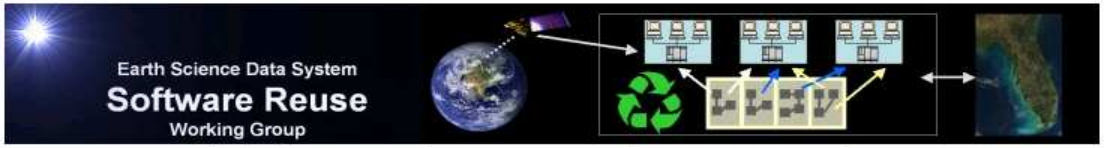

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Funding Opportunities

Both *Earth Science* and *Software* Reuse are areas of increasing research. Funding large-scale projects can require funding from multiple sources. Compiled are two directories dedicated to sources of research funding.

Funding Opportunities are divided into:

- NASA: Funding opportunities within NASA
- Other: Funding opportunities outside NASA including governement or private sector grants.

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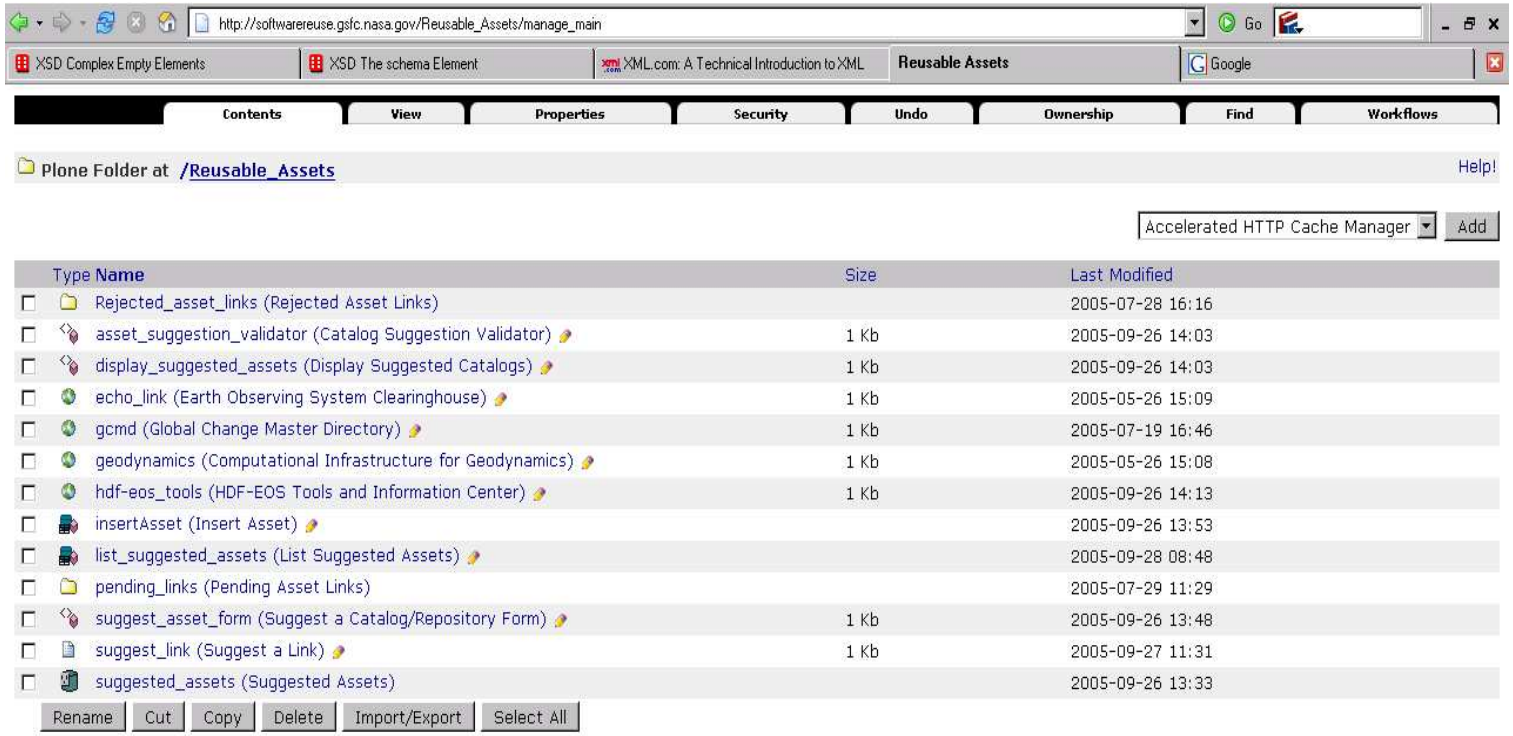
Zope Interface



Workflow Goals

- Multiple Accounts with each user maintaining a portion of the website.
- Administrators can approve a submitted change before updates are made live.
- Each page of the website can have a different set of permissions and a different set of users allowed to submit changes.

Working Group Goals

- Members of the Working Group can volunteer to maintain/contribute content to the portal
- Fill the portal with high-quality resources

Steps to Add Content

- Login with your account
- Select appropriate folder
- Add appropriate object (link, conference, meeting) under the “Contents” tab
- Fill in necessary fields
- Click “Save”
- Review Process

software reuse - Sign in - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://softwarereuse.gsfc.nasa.gov/login_form
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Please log in
To access this part of the site, you need to log in with your user name and password.
Account details
User Name
User names are case sensitive, make sure the caps lock key is not enabled.
Password
Case sensitive, make sure caps lock is not enabled. If you have forgotten your password, click here to retrieve it.
Remember my name.
Check this to have your user name filled in automatically when you log in later.
log in
Please log out or exit your browser when you're done.
http://www.nasa.gov/centers/goddard/home/index.html
Adblock
Start
Inbox - Mozilla Thunderbird
SD3E_to_PEATEs_ICD_8...
software reuse - Sign ...
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NPP_SDS_design_0.01.d...
SD3E_to_PEATEs_ICD_0...
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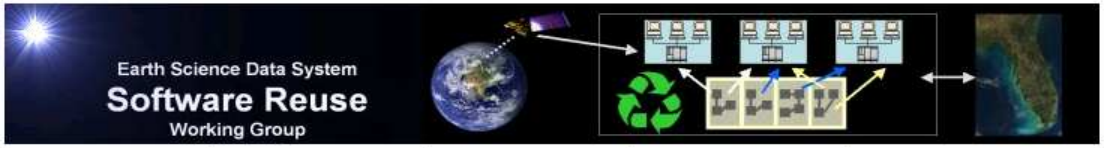

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HDF-EOS Tools and Information Center
A collection of format converters, libraries, toolkits, utilities, and visual applications for use with HDF and HDF-EOS.

Pending Asset Links
Storage area for potential Reusable Asset links.

Rejected Asset Links
Recycling Bin for Reusable Asset links.

http://softwarereuse.gsfc.nasa.gov/Reusable_Assets/folder_contents

GODDARD SPACE FLIGHT CENTER

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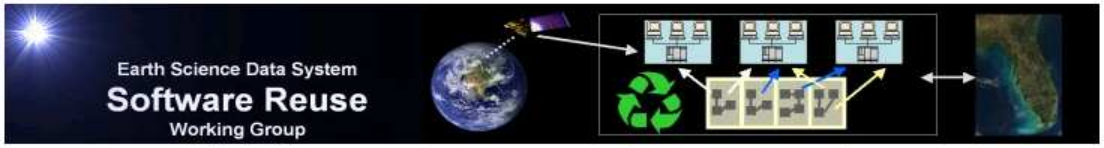

+ HOME | + REUSABLE ASSETS | + RESOURCES | + OPEN SOURCE | + FUNDING OPPORTUNITIES

rsgerard | my folder | my preferences | undo | plone setup | log out

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A report from the Reuse Working Group meeting in San Diego
2005-06-14

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upcoming events

Geological Society of

contents | view | sharing | properties

add new item | state: published

Reusable Assets

Up one level

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Select | add new item

Select
Document
Event
File
Folder
Image
Link
News Item
Topic

	title	size	modified	state	order
☐	gest a Link	1.5 kB	2005-09-27 11:31:52	published	
☐	nputational Infrastructure for amics	1 kB	2005-05-26 15:08:53	published	
☐	h Observing System ghouse	1 kB	2005-05-26 15:09:22	published	
☐	Global Change Master Directory	1 kB	2005-07-19 16:46:14	published	
☐	HDF-EOS Tools and Information Center	1 kB	2005-09-26 14:13:13	private	
☐	Pending Asset Links		2005-07-28 15:58:43	private	
☐	Rejected Asset Links		2005-05-26 14:12:18	private	

rename | cut | copy | delete | change state

If you want to create a default page in this folder that will replace the ordinary item listing in a folder, click this button.

create default document

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upcoming events

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- OOS TECH 2005 Baltimore, MD, 2005-10-24

contents | view | edit | sharing

add new item | state: private

Event has been created.

Edit Event

Fill in the details of the event you want to add.

Event Details

Short Name

Short Name is part of the item's web address. For accessibility reasons, do not use spaces, upper case, underscores, or special characters.

Title ■

Event Location

Enter the location where the event will take place.

Event Type

Multiple event types possible by depressing Ctrl (or Apple key on Mac).

Appointment
Convention
Meeting
Social Event
Work

Description

A brief description of the item.

Event URL

Optional web address of a page containing more info about the event.

Event Starts ■

Click the calendar icon to select a date or browse the calendar.

2005 / October / 18 15 : ----

Event Ends ■

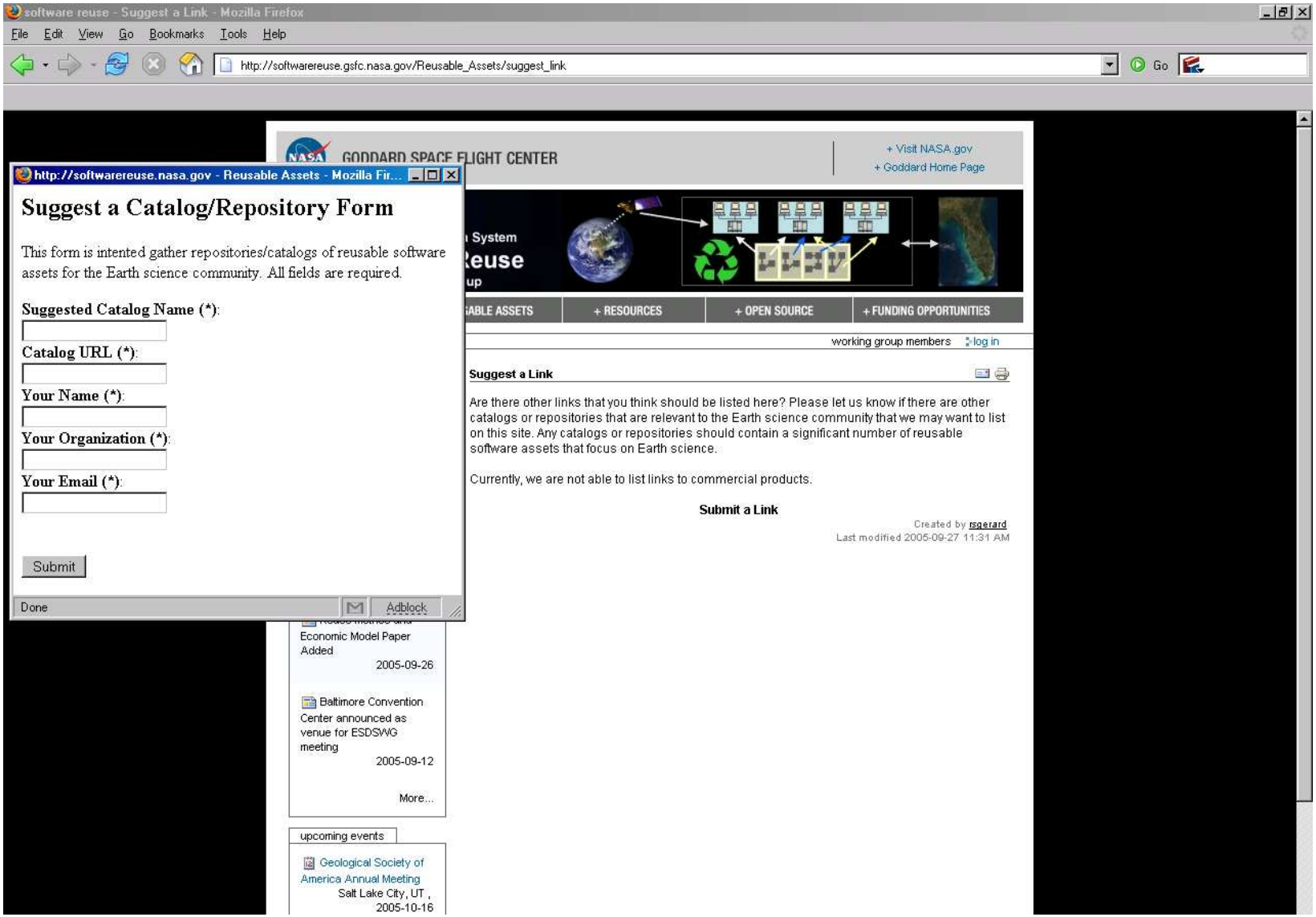
Click the calendar icon to select a date or browse the calendar.

2005 / October / 18 15 : ----

Future

- Establish Working Group accounts
  - What is considered good content to add to the site?
- Continue to update upcoming news, events and publications
- Monitor site statistics closely
  - What are people searching for?
- Begin accepting reusable asset repositories from the Earth Science community.

Catalog Submission Prototype



Site Content

- The Earth Science Data System Reuse Working Group has developed some guidelines concerning site submissions.
- Prevents the addition of resources that should not added to the site.
- Encourages only high-quality content relevant to software reuse.
- **Robert Downs** to present further.